

FOR THE
ADAPTIVE COMPUTING ENGINE

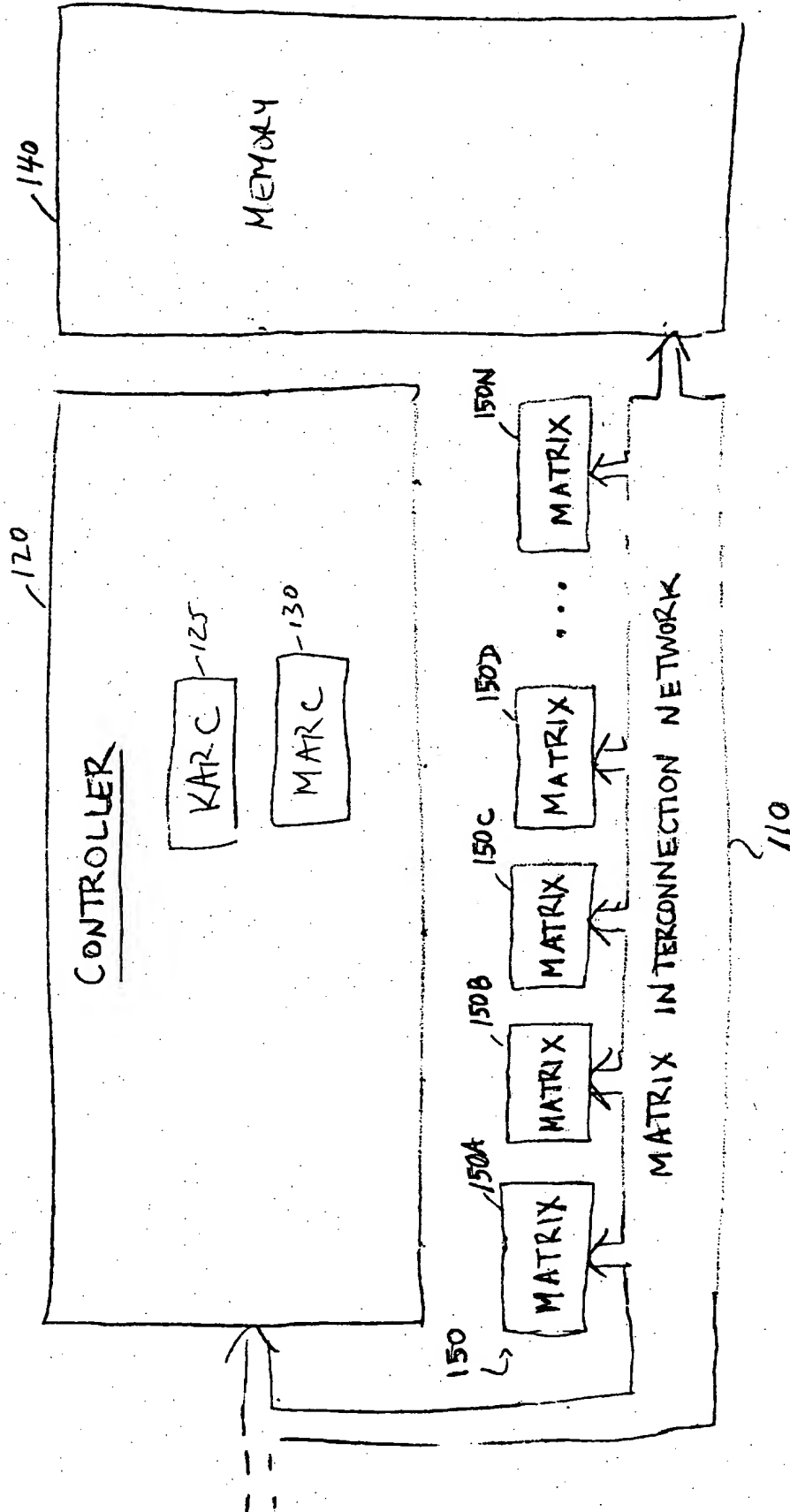
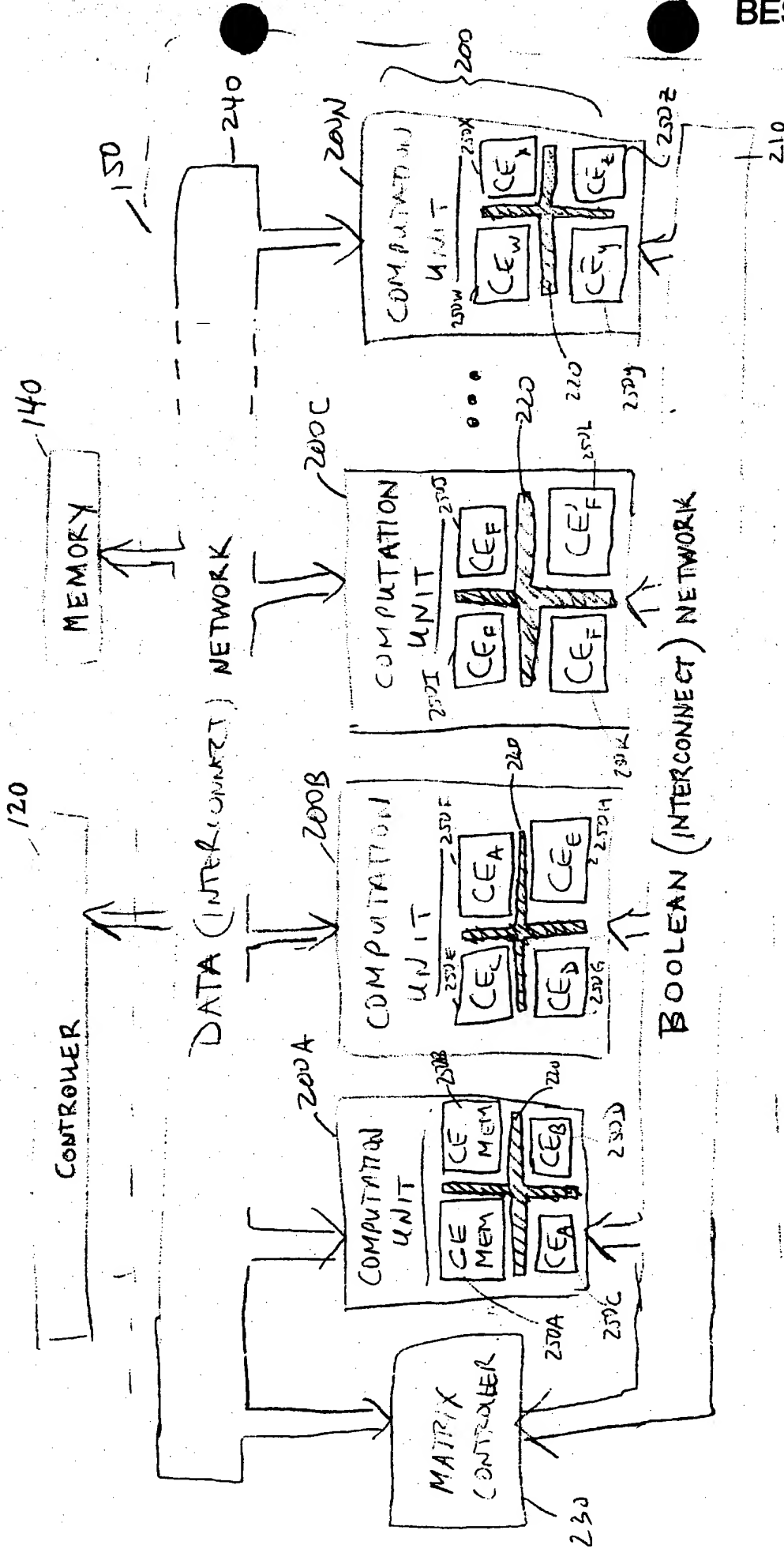


FIG. 1

Fig. 2

FOR ATTENTION



discuss an actual problem of...

$$y[j] = \sum_{i=0}^j x[i], \quad j = 0, \dots, N-1; \quad N = 7$$

Fig. 3a

```

module partialSums (void)
{
    int16 x;
    int16 y = 0;
    const int16 N = 7;

    loop N {
        x = inputFIFO ();
        y += x;
        outputFIFO (y);
    }
}

```

Fig. 3b

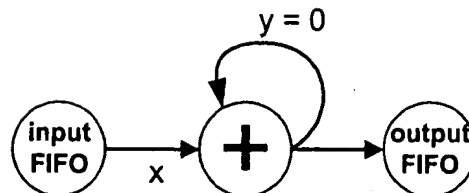


Fig. 3c

Input Unit (IU)

Arithmetic Unit (AU)

Output Unit (OU)

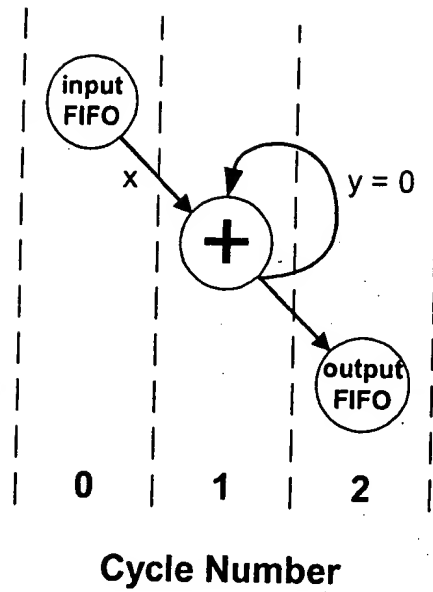


Fig. 3d

**Instantiation
Number**

0 1

Input Unit (IU)

Arithmetic Unit (AU)

Output Unit (OU)

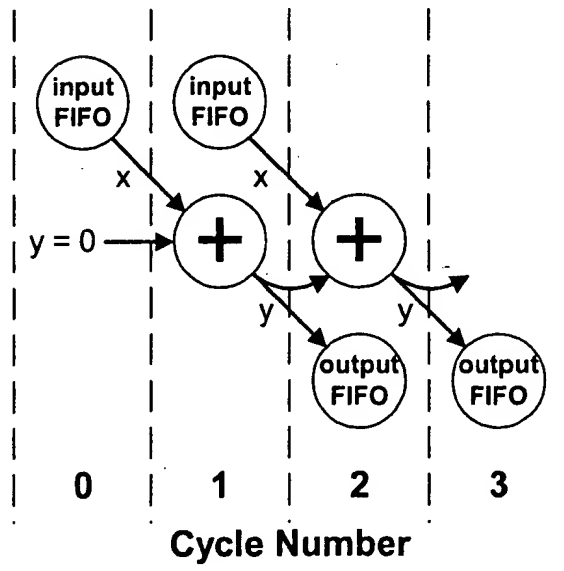


Fig. 3e

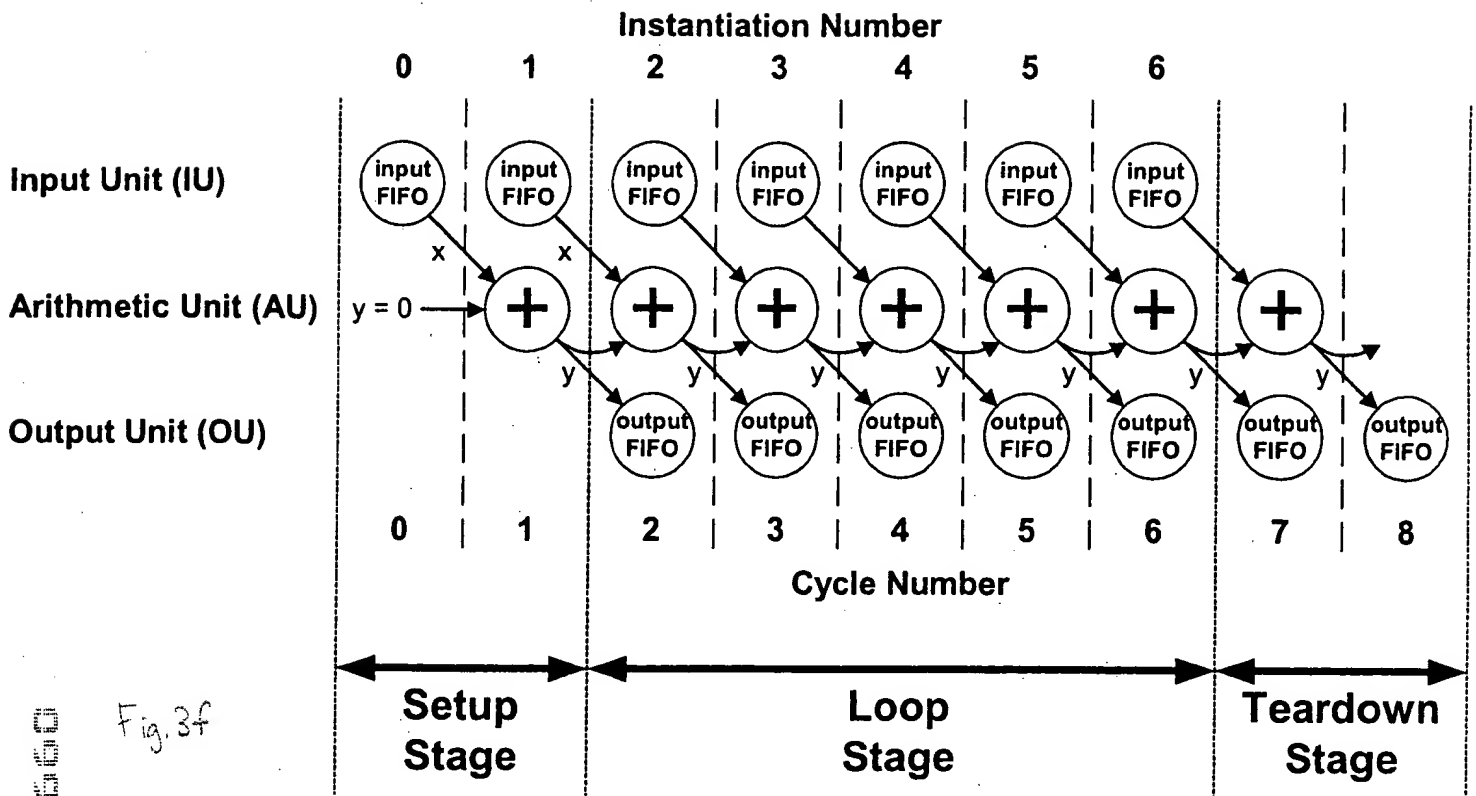
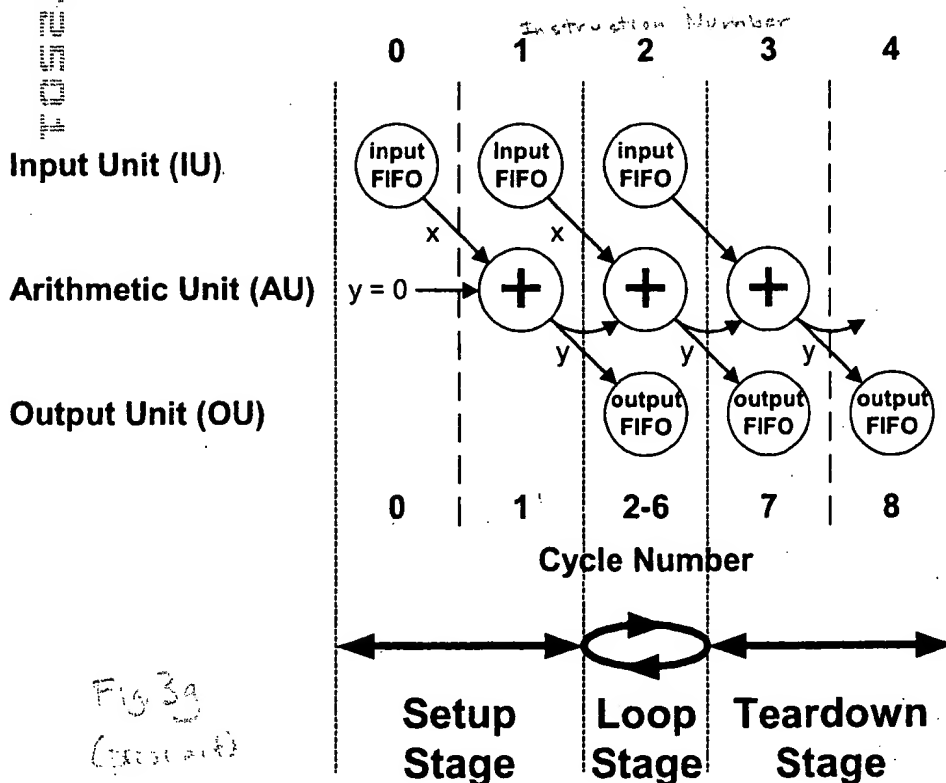


Fig. 3f



e.g.

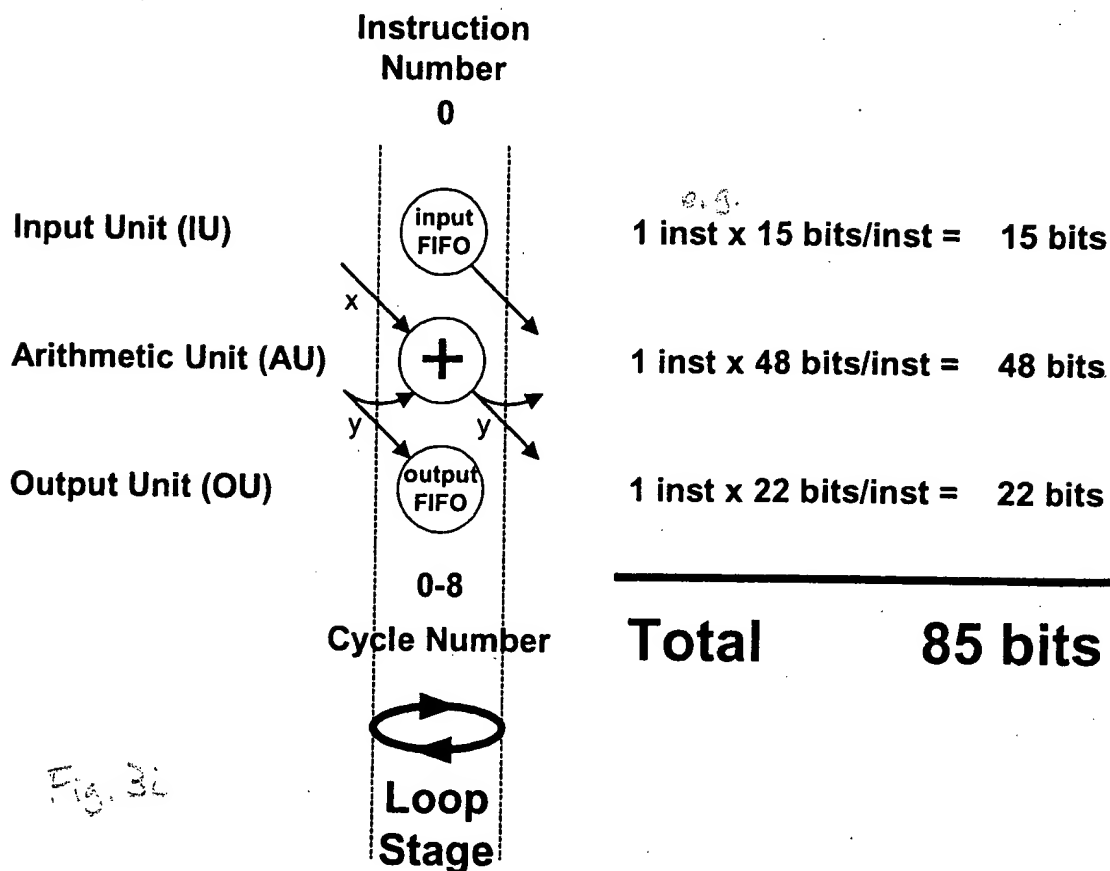
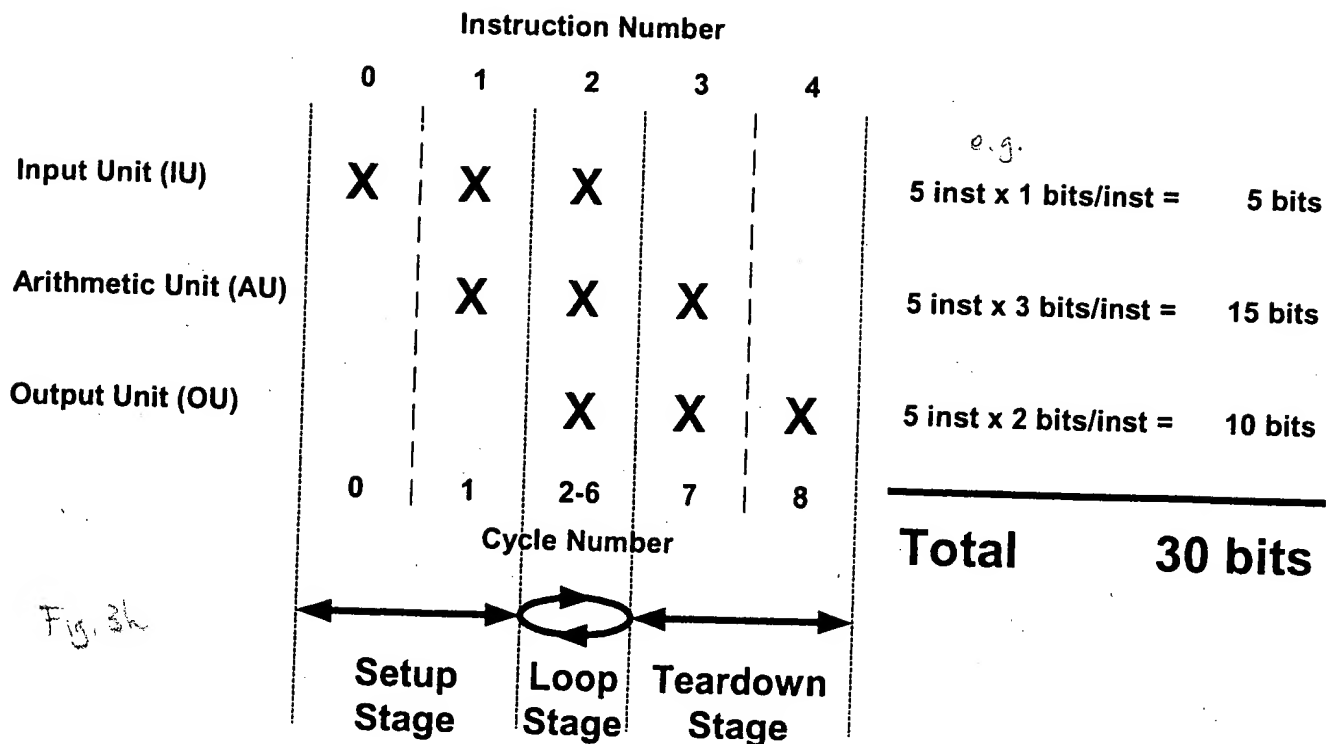
$$5 \text{ inst} \times 16 \text{ bits/inst} = 80 \text{ bits}$$

$$5 \text{ inst} \times 51 \text{ bits/inst} = 255 \text{ bits}$$

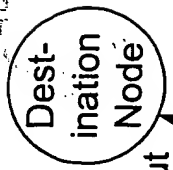
$$5 \text{ inst} \times 24 \text{ bits/inst} = 120 \text{ bits}$$

$$\text{Total} \quad 455 \text{ bits}$$

Fig. 3g
(continued)



405

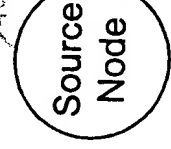


Input Port

Input Edge

400

Output Port



Output Edge

Input Edge

Input Port

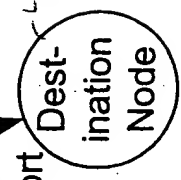


FIG. 4

FIG. 4 is a diagram of a network topology.